Using persuasive marketing methods and mobile phones as active
learning devices to enhance students' learning

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Abstract

One of the latest additions to the educator's toolbox are learning parcels sent to the students' mobile phones. We used a four factor sales and marketing model from previous research to produce and evaluate the contents of the learning parcels and the mobile phone concept. The four factors are: *Relevance*, *timeliness*, *responsibility* and *value*. In an action research program during the first semester of 2015, we tested to which degree the students felt their curriculum knowledge improved through the use of learning parcels on their mobile phones. We learned that the novelty effect of using mobile phones as a medium quickly evaporated. The use of the learning parcels depends to a high degree on the instant feeling of high usefulness in relation to the four factors and is decisive for students' use of the learning parcels and the concept as such. A significant number of the students liked the concept, and were sure of its positive learning outcome.

Purpose

The purpose of this paper is to present the development and effectiveness test of a series of learning packets sent to the mobile phones of students taking a Bachelor's degree. A four-factor research model is presented that can be used for accessing new teaching tools and the contents of learning parcels.

Design/methodology/approach

We tested the four-factor model and the use of learning parcels on one class of Norwegian students. 135 students established an account, and 57 student made use of the APP and downloaded in total ten learning parcels. These were weekly send to their mobile phones, assisting them in understanding specific parts of the curriculum.

Findings – Students experienced improved learning outcomes through the use of learning parcels on their mobile phones. The contents of the learning parcels should be optimized by the use of our four-factor model. The universal model can be used to judge learning parcels in industrial teaching and training programs. The contents are more engaging when the medium is a mobile phone and the length of the contents is short and engaging.

Research limitations/implications
It would be rewarding to measure the effect on the outcome of the mobile learning parcels on the results of the students. We have only their own opinion on the effect. The results from the action research will be used in a new round of action research this year and next year. It will then be possible to compare the alterations made from the first round of research presented here.

Originality/value
This paper appears to be the first, which simultaneously examines the use of a marketing model to target contents of learning parcels and the use of mobile phones as learning media.

Keywords: Mobile learning parcels, a four-factor pedagogy model, learning evaluation model, action research.

Introduction

Students very quickly learn how to optimize study time and effort, often neglecting good advice from educators on how to study. In the struggle to prioritize one's workload of study in competition with social activities and employment alongside studies, new tools that can ease the learning process without costs or trouble are welcome. In this article, we shall present a concept of learning, and the test of the effectiveness of short learning parcels sent to the student's mobile phone. We use a comprehensive testing and motivation model (Kunøe, 2006)[i] from sales and marketing theory. The learning parcels are part of our blended learning concept, where we constantly try to add effective learning tools to our main teaching methods in large classes. We endeavor to teach students to learn and think, and are conscious of how crucial their motivation is to their learning outcomes. Wlodkowski and Ginsberg (1995)[ii] mention several ways of motivating from their research and 'engendering competence' is a central finding in their motivation theory research. 'Engendering competence' is the need for the learner to feel that success is possible. The self-assessment on the part of the learner is one of the numerous ways of acknowledging where one stands. The small quiz included at the end of each learning parcel is an unceremonious test and part of the self-assessment.

The outcome of the contents of one's studies should be the focal point of interest for students. Putting new tools into the students' hands that can ease the load of learning and teaching is most welcome. Consequently, a number of teaching tools and methods are constantly offered by inventive companies. New electronic gadgets and supposedly student engaging offers on our learning platform are presented as another step to the 'learning & teaching nirvana'. The test of enhancing curriculum learning, not just easing teaching, is however less focused, leaving the judgement of the applicability of new teaching methods to the university and the teachers.

'Snake oil'?

During more than 30 years of personal experience with blended learning, I have seen that the 'teaching industry' has incessantly been presenting new ways of teaching, learning, tutoring, promoting the use of digital gadgets for better learning, arranging classroom competitions, running classroom multiple-choice tests, motivating for students' peer assessments, giving online feedback, exploiting digital blackboards, 'flipped classroom' etc. We are, however convinced that better evaluation criteria are needed for the educators and their universities in order to prioritize and concentrate on persuading students to choose learning tools that actually help them to better understand the curriculum -- not just to accept the new methods and gadgets of learning because they are new, believing they will work miracles with a minimum of students' effort. With a critical eye and a workable set of selection criteria, it seems obvious that much of what is been brought to market as unique tools has more the character of 'snake oil'. Snake oil is the wonder medicine that cures everything. We need a proper teaching and learning tool that can create timely value from relevant teaching methods while taking responsibility for the students' outcomes.

Any teaching concept must take into account the teaching framework and the motivational status and background of the individual student. Are we teaching small classes of up to 10 motivated persons and have a lot of time to tutor them? Are we facing large classes of 100 persons or more where we know that many in the classroom would like to be somewhere else? Are we in a distant learning context? Providing the student with a set of very easy to comprehend opportunities (Husman et al., 2000)[iii] for understanding the specific textbook part presented can overcome part of the problem of individuality of learning.

Many frameworks are fixed and 'time' -- being one of them -- is not on the students' side. They watch the pile of books, articles and engagements, and want an easy way out of their learning problem. Consequently, classroom experiments that seem to be time consuming, and where the outcome is not easy to detect, are not welcome. However, the 'snake oil concept' as an alternative novelty that solves all problems is offered constantly, and is tempting to the educators as well as their universities and their students. Not to forget the reward to those who market and sell novelties in higher education. Are there any new pedagogical tools or methods worth exploiting? Well, maybe the learning parcels on mobile phones concept is one of them. We tested it.

A mobile phone teaching and learning concept
The main purpose of engaging in this new teaching and learning method was to make second year bachelor students actually study certain important parts of their main textbook in a specific course.
Our purpose and goal for engaging in the implementation of a learning parcel on students' mobile phones rested on at least the below factors:

- 'The learning parcels on mobile phones concept' is easy to explain and understand and the barrier to using it is low.
- The learning parcel is cost effective in use and relatively easy to produce, send and control.
- It can be handled by any teacher, results are easy to check, and the contents can be altered according to experience.
- The concept does not need to take precious lecture time. Students participate on their own time.
- The concept should be able to engage a major part of the students instantaneously.
- It should be rewarding to students. The action research controls the opinion of what the learning outcome is.
- It is trendy to use mobile phones in teaching and learning.
- The concept comes with a personal touch from the educator to the student.

The ten learning parcels we developed were downloaded via an APP to 57 Norwegian students in their 2nd year of a Bachelor's degree during the spring semester of 2015. The single learning parcels were identically designed and all consisted of these four elements:

- A brief introduction to the topic of the day's parcel.
- A video of approximately 30 seconds featuring the educator explaining the piece of curriculum for the specific learning parcel.
- An important figure or a model for tomorrow's lecture was showed.
- A small quiz of three easy-to-answer alternatives, of which two were wrong. The students who returned their answer via the APP were testing their own knowledge. The quiz more or less forced the students to check their textbook.

The sender of the parcels gets statistical feedback about how many students opened the parcel, and a figure of how many students answered the quiz correctly. The right answers are pre- coded, and the student, who is not anonymous, gets the feedback immediately and can see which answers were right or wrong. The difficulty level of the questions was deliberately low, in order to emphasize the informal nature of the concept. This distinguished the learning parcel concept from some clever kind of exam. The learning concept on the mobile phones can be viewed as a hybrid between Twitter and E-learning.
The program started with an introduction send through our common teaching platform at the start of the semester, announcing and explaining the new learning concept. During the spring semester of 2015,

a learning parcel was sent on most Tuesday afternoons prior to the Wednesday lecture for ten consecutive weeks to those students who wanted to participate by downloading the APP. Without the APP no participation was possible. 57 students participated, which was 66 % of those registered on the course. Their activity varied during the semester. The parcel could be opened as many times as the student wanted. A push notification was sent to the student every time a new package was published.

For the busy educator, the best learning tool would be the one used by and administered by the student herself, preferably outside the classroom and used in connection with the student's preparation for the next lecture. The research was done based on a model called 'The four factor model of persuasion'. The model is a result of research on bank customers' preconditions for their purchasing loyalty, carried out in 2006 (Kunøe, 2006). In search of a tool adhering to the four-factor model, we encountered the learning parcel concept of mYouTime.

The action research

An action research model was chosen (Burns, A. 2010)[ivv] in order to follow and adjust the contents of our learning parcels according to the findings of 2015. The contents of the learning parcel adhered to a four factor sales and marketing model which was the result of research done in 2006 (Kunøe, 2006). The four factors are:

- Relevance
- Timeliness
- Responsibility
- Value

In the present research we are testing the student's opinion of learning outcomes. We are testing if a series of curriculum subjects are easier to learn or more engaging when the medium is a mobile phone and the length of the message is short.

We wanted to test our four-factor model and the present research shows that it is applicable and useful as an evaluation tool to prioritize teaching and learning tools. As every student has a mobile phone, we set out to test the learning parcel on Bachelor's students in their second year. The learning goal was to have them study specific parts of the curriculum more thoroughly than they usually do.

Questions and results

A questionnaire was distributed to the class at their last lecture of the semester. 57 students answered the questions. The statistics from the questionnaire plus the frequency statistics are the results we have to support our analysis. Questions, the results and the analysis will be presented jointly below.

Frequency statistics

The students' interest in the ten weekly learning parcels quickly declined. Fewer participated with every new learning parcel, ending up with a reduction of 80% on the last learning parcel issued compared with the first parcel. The number of viewers rose a bit when the examination period was approaching, but not significantly. The learning parcels can be re-used. Analyzing only the frequencies gives a depressing picture of a lost battle for the student's learning by sending learning parcels to their mobile phones. We also asked whether the respondent was a male or a female and the results show that there were no significant differences between male or female students, only a slight overrepresentation of male respondents.

Here are the questions and the results with a comment on each question related to the four-factor model.

Question 1. How many times have you used the learning parcels?
- 40% had used it twice
- 37% had used it five times
- 23% had used all nine possibilities.

Judging the four-factor model as a totality, we are satisfied with the frequency. Ambition is higher, though, and new contents were designed according to the results of the action research.

Question 2. How often do you want to have a learning parcel?
- 10% wanted several times per week
- 57% wanted a learning parcel once a week
- 25% wanted every second week
- 8% wanted more seldom

We are testing the 'timeliness' factor of the model and the students want delivery as they are accustomed to, i.e. once a week.

If we were to comply with the main results of question 2, a system could be arranged where the students themselves fetch learning parcels at their own volition. It could be arranged by producing all the learning parcels and making them accessible at the start of the semester, instead of having one new parcel sent each week.

Question 3. How relevant do you consider the learning parcels?
- 75% consider the learning parcels very relevant
- 25% consider the learning parcels less relevant

A most comforting result and an inspiration for further development of the concept. The learning parcels are not forced on the students. They can just leave them unopened if they do not want them and refrain from downloading the needed APP.

Question 4. How valuable is the learning parcel for your learning?
- 13% answered that the learning parcels had had great value for their learning outcomes
- 70% answered that the learning parcels had had some value for their learning outcomes
- 17% answered that the learning parcels had had little value for their learning outcomes

'Value' is a very important learning factor for the student and if the result of our effort is only of some value, there is room for improvement. The fact that a large majority tell us that the parcels only had 'some value' is a clear signal for improvement. The felt value of both the concept and the single learning parcel must be improved significantly to meet a greater feeling of value.

Question 5. Do you feel that the course educator takes more responsibility because he has issued the learning parcels?
- 37% answered that they felt that the educator – which is similar to the course responsible – took responsibility to a high degree.
- 43% answered that they felt that the educator took responsibility to some degree
- 20% felt that the educator took responsibility to a small degree

As responsible for the course, it is my duty to secure the students' learning outcome. My students should feel safe that what is sent to them is the outcome of thorough reflection. If that feeling is feeble, the contents and the media we distribute them through should be changed. The research of Wlodkowski and Ginsberg (1995) revealed the motivation factor 'establishing inclusion', where the educator conveys a sense of respect for the student. The feeling of somebody taking care of you is part of the learning motivation.

Question 6. Are you going to use the learning parcels for repetition and preparation to the exam?
- 53% yes
- 8% no
- 39% maybe

The questionnaire was answered in the last lecture of the course, and it may be too much to ask for at that moment, i.e. whether or not students see further use for the learning parcels.

Question 7. What part of the learning parcels did you like the best?
- The videos? 15% preferred the video
- The text parts? 15% preferred the text
- The quiz? 18% preferred the quiz
- The figures and the illustrations? 12% preferred the illustrations
- The alternative way of learning curriculum? 25% preferred this alternative way
- To be able to open the learning parcel wherever you are and at any time? 15% saw that as a preferred advantage

Judging by the answers, the question is superfluous. The students have no special interest in the answer and no opinion as to what is 'best'.

Question 8. As a whole, I am very pleased with the learning parcels
Scale: Disagree 1 2 3 4 5 6 7 Agree
We have separated the results into two parts: 1) From score 1, 2, 3 and 4 on the «disagree»-side 30% marked their discontent with the learning parcels. 2) From score 5, 6 and 7 on the 'agree-side' 70% marked their content with the learning parcels. It is a pleasure to note that a large majority of students is pleased with the learning possibilities they obtained on their mobile phones.

Question 9. Tips from you. What kind of alternative contents could the learning parcels have, as to text, video, photos, curriculum etc.?
Frequency statistics
The students' interest in the learning parcels quickly declined. We experienced fewer participant with every new learning parcel sent, ending up with a reduction of 80% on the tenth learning parcel issued, compared with the first parcel. The number of viewers rose a bit when the examination period was approaching, but not significantly. Judging the success of the concept just from the frequency figures gives a depressing picture of a lost battle for students' learning by having learning parcels downloaded to their mobile phones.

Future research
The next year's action research will continue with new students attending the same course. The emphasis will be on the points below:
1. We will produce a new set of learning parcels and adjustments to the contents of the individual learning parcels in closer accordance with the four-factor model of relevance, timeliness, value and responsibility. In the coming action research we will check how rewarding a more enthusiastic and surprisingly delivered learning parcel is, assuming that the mobile phone as a brief medium has an underlying expectation of a high degree of instantaneous usefulness. It is possible to re-use and edit the single package.
2. We will test the feasibility of sending out learning parcels with and without the quiz at the end of the parcel. The development of the APP is under constant development and many options are now at hand. The quiz is what takes the most time because the student has to first read the whole parcel, close it and download it again in order to participate in the quiz if they want to be sure of the answer. Part of the goal evaporates through this, as we hoped the quiz would force the students to go through the subject in question once again. We hope this diversity can lead to a better learning outcome.
3. A more inviting and persuasive approach will be tested. There could be an expectation of instant presentation of 'easy-to-understand' explanations to the subject discussed. We know from marketing theory how important the first impression is and that it will pave the way for welcoming new learning parcels and re-using the ones already visited, as the student can open the learning parcels downloaded as many times as she wants.
4. The mobile phone concept as a distribution medium will be untouched in the next action research program, unless the students at that time are overwhelmed with learning parcels to their phones. The mobile phone is not a 'snake-oil-remedy' to every learning problem.
5. We do not know for sure whether the students who participated obtained better results with the learning parcels than without. We have only their own statement of the result.

When we saw interest dwindle during the semester, was that because the concept was not important enough? Do the students care less because there is no immediate consequence if they do not participate?

An interesting effect is that even though students stopped downloading the learning parcels, they had an opinion as to the positive benefits of the concept and its possibilities for their learning. One should bear in mind that the questionnaire was distributed and answered at the last lecture. The students would have ample opportunity to use the learning parcels for repetition purposes in the future, which they reported that they would. If this really happened, we do not know.

Conclusion and improvements
1. The learning parcel on mobile phones
We are in the midst of what Alvin Tofler (1980)[vi] many years ago called 'the third wave' of great change experienced by humanity – the technological revolution. A tiny part of this revolution is the concept of distributing learning parcels via mobile phones. This is part of the blended learning in higher education of today (Benshoff J. M. & Gibbons M.M. 2011)[vii]. Our research showed that mobile phones as part of a learning and teaching concept can be rewarding for students' in their understanding of difficult parts of the curriculum, provided the messages sent are tailor-made to the medium. We learned, that sending learning parcels to mobile phones might be ideal if the contents are a good mixture of relevance, timeliness, responsibility and value.

Our research showed that the contents of the learning parcel are definitely more important than we figured at the outset of the test. Contents of mediocre quality, according to the students, even if they are part of the curriculum, cannot be substituted by the use of a trendy medium such as mobile phones and APPs.

2. Influence of the «word-of-mouth» effect
Students like to talk about their learning experiences, and the effect of 'word-of-mouth' communications (Dichter 1966)[viii] has a strong impact on the use of the learning parcel on mobile phone concept. 'Word-of-mouth' will have a stronger position in the coming marketing of the learning parcels. Additionally, in the coming action research there will be more marketing of the possible learning outcomes in and outside the classroom. A weekly briefing on the contents of the coming learning parcel will appear on the learning platform where students fetch their upcoming lecture's documentation.

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